

In the Claims:

Claims 7-15 have been withdrawn from consideration. Please cancel Claims 1-6 and 16-21 and add new claims 22-52, such that the claims are as set forth below.

1-6. (Cancelled)

7. (Withdrawn) An optical coating for a substrate, comprising:

a first anti-reflection layer of a dielectric;

a first metallic layer over the first anti-reflection layer;

a second anti-reflection layer of a dielectric over the first metallic layer;

a second metallic layer over the second anti-reflection layer; and

a third anti-reflection layer of a dielectric over the second metallic layer;

wherein at least one of the first anti-reflection layer, the second anti-reflection layer, and the third anti-reflection layer comprises an amorphous material, the amorphous material comprising titanium oxide and an additive, wherein the additive in an oxidized state does not form a solid solution with the titanium oxide.

8. (Withdrawn) The optical coating according to claim 7, wherein the additive is selected from a group consisting of silicon, aluminum, bismuth, gadolinium, tantalum, zinc, and any combination thereof.

9. (Withdrawn) The optical coating according to claim 7, wherein the second metallic layer comprises silver.

10. (Withdrawn) The optical coating according to claim 7, further comprising a barrier layer between the second anti-reflection layer and the second metallic layer.

11. (Withdrawn) The optical coating according to claim 7, further comprising a barrier layer between the second metallic layer and the third anti-reflection layer.

12. (Withdrawn) The optical coating according to claim 10 or 11, wherein the barrier layer comprises a material selected from a group consisting of titanium, nickel-chromium, aluminum, and zinc.

13. (Withdrawn) An optical coating for a substrate, comprising:
a first high-refractive index layer;
a first low-refractive index layer over the first high-refractive index layer;
a second high-refractive index layer over the first-low refractive index layer; and
a second low-refractive index layer over the second-high refractive index layer;
wherein at least one of the first high-refractive index layer and the second high-refractive index layer comprises an amorphous material, the amorphous material comprising titanium oxide and an additive, wherein the additive in an oxidized state does not form a solid solution with the titanium oxide.

14. (Withdrawn) The optical coating according to claim 13, wherein the additive is selected from a group consisting of silicon, aluminum, bismuth, gadolinium, tantalum, zinc, and any combination thereof.

15. (Withdrawn) The optical coating according to claim 13, wherein at least one of the first low-refractive index layer and the second low-refractive index layer comprises a material selected from a group consisting of silicon dioxide and silver.

16-21. (Cancelled)

22. (New) An optical coating for a substrate, comprising:
a first anti reflection layer of a dielectric;
a first metallic layer over the first anti-reflection layer; and
a second anti-reflection layer of a dielectric over the first metallic layer;
wherein at least one of the first anti-reflection layer and the second anti-reflection layer comprises an amorphous material, the amorphous material comprising titanium oxide

and an additive, wherein the additive in an oxidized state does not form a solid solution with the titanium oxide.

23. (New) The optical coating according to claim 22, wherein the additive is selected from a group consisting of silicon, aluminum, bismuth, gadolinium, tantalum, zinc, and any combination thereof.

24. (New) The optical coating according to claim 22, wherein the first metallic layer comprises silver.

25. (New) The optical coating according to claim 22, further comprising a barrier layer between the first anti reflection layer and the first metallic layer.

26. (New) The optical coating according to claim 22, further comprising a barrier layer between the first metallic layer and the second anti-reflection layer.

27. (New) The optical coating according to claim 25 or 26, wherein the barrier layer comprises a material selected from a group consisting of titanium, nickel-chromium, aluminum, and zinc.

28. (New) The optical coating according to claim 22, wherein the amorphous material remains substantially unchanged in amorphism at a heat-treatment temperature of the substrate.

39. (New) The optical coating according to claim 22, wherein the amorphous material remains substantially unchanged in refractive index at a heat-treatment temperature of the substrate.

30. (New) The optical coating according to claim 22, wherein the amorphous material remains substantially unchanged in size at a heat-treatment temperature of the substrate.

31. (New) The optical coating according to claim 28, 29, or 30, wherein the heat-treatment temperature is below a crystallization temperature of the amorphous material.

32. (New) The optical coating according to claim 28, 29, or 30, wherein the heat-treatment temperature is selected from a group consisting of a frit-sealing temperature, a heat-strengthening temperature, a shaping or bending temperature, and a tempering temperature.

33. (New) The optical coating according to claim 22, wherein the amorphous material is sufficient to reduce atmospheric oxidation of an underlying layer.

34. (New) The optical coating according to claim 22, wherein the amorphous material is sufficient to reduce contaminant migration to an overlying layer.

35. (New) The optical coating according to claim 22, wherein the amorphous material is sufficient to reduce haze.

36. (New) The optical coating according to claim 22, wherein the amorphous material is sufficient to reduce contaminant interdiffusion between an underlying layer and an overlying layer.

37. (New) The optical coating according to claim 22, wherein a crystallization temperature of the amorphous material is above about 300 °C.

38. (New) The optical coating according to claim 22, wherein a refractive index of the amorphous material is above about 2.1.

39. (New) A method of processing a substrate, comprising:
depositing a first anti-reflection layer of a dielectric over a substrate;
depositing a metallic layer over the first anti-reflection layer; and
depositing a second anti-reflection layer of a dielectric over the metallic layer;

wherein at least one of the first anti-reflection layer and the second anti-reflection layer comprises an amorphous material, the amorphous material comprising titanium oxide and an additive, wherein the additive in an oxidized state does not form a solid solution with the titanium oxide.

40. (New) The method of claim 39, wherein at least one of the depositing a first anti-reflection layer, the depositing a metallic layer, and the depositing a second anti-reflection layer comprises sputtering.

41. (New) The method of claim 39, wherein at least one of the depositing a first anti-reflection layer and the depositing a second anti-reflection layer comprises sputtering, in an oxygen environment, a target comprising titanium and the additive.

42. (New) The method of claim 39, wherein at least one of the depositing a first anti-reflection layer and the depositing a second anti-reflection layer comprises sputtering, in an oxygen environment, a first target comprising titanium and a second target comprising the additive.

43. (New) The method of claim 39, wherein the additive is selected from a group consisting of silicon, aluminum, bismuth, gadolinium, tantalum, zinc, and any combination thereof.

44. (New) The method of claim 39, wherein the amorphous material is deposited at a high absolute deposition rate.

45. (New) The method of claim 44, wherein the absolute deposition rate is greater than about five angstroms per second.

46. (New) The method of claim 39, wherein the amorphous material is deposited at a low temperature.

47. (New) The method of claim 46, wherein the temperature is in a range of about 20 °C to about 40 °C.

48. (New) The method of claim 39, wherein the amorphous material is deposited at a high absolute deposition rate and a low temperature.

49. (New) The method of claim 39, further comprising, after said depositing of the first anti-reflection layer, the metallic layer, and the second anti-reflection layer, heating the substrate to at least a heat-treatment temperature of the substrate.

50. (New) The method of claim 49, wherein the heat-treatment temperature is below a crystallization temperature of the amorphous material.

51. (New) The method of claim 49, wherein the heat-treatment temperature is selected from a group consisting of a frit-sealing temperature, a heat-strengthening temperature, a shaping or bending temperature, and a tempering temperature.

52. (New) The method of claim 49, further comprising at least one of fritting, heat-strengthening, shaping or bending, and tempering of the substrate.